| a b | z |
|---|---|
| 0 0 | 1 |
| 0 1 | 1 |
| 1 0 | 1 |
| 1 1 | 0 |

Truth Table

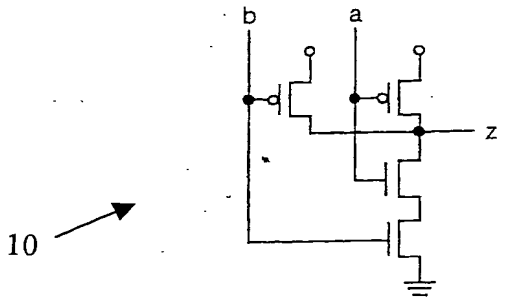



FIG. 1

| a b | z |
|---|---|
| 0 0 | 1 |
| 0 1 | 0 |
| 1 0 | 0 |
| 1 1 | 0 |

Truth Table

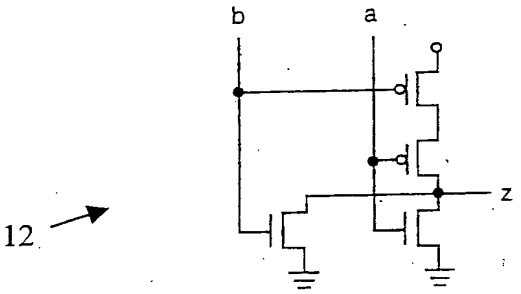



FIG. 2

| a | z |
|---|---|
| 0 | 1 |
| 1 | 0 |

Truth table

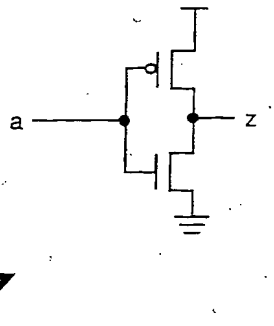



FIG. 3

| a b | z |
|---|---|
| 0 0 | 0 |
| 0 1 | 1 |
| 1 0 | 1 |
| 1 1 | 0 |

Truth Table

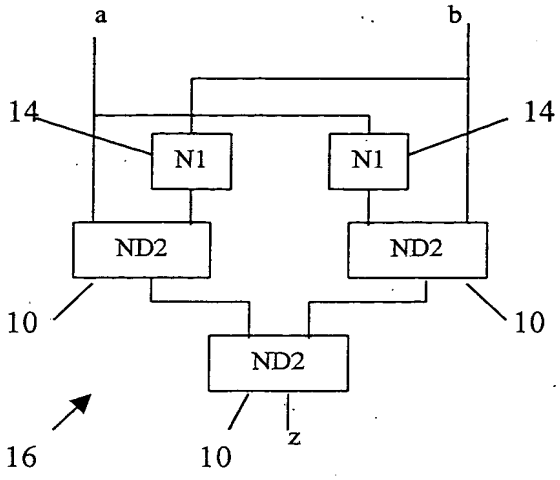



FIG. 4

| a b s | z |
|---|---|
| 0 0 0 | 0 |
| 0 0 1 | 0 |
| 0 1 0 | 0 |
| 0 1 1 | 1 |
| 1 0 0 | 1 |
| 1 0 1 | 0 |
| 1 1 0 | 1 |
| 1 1 1 | 1 |

Truth Table

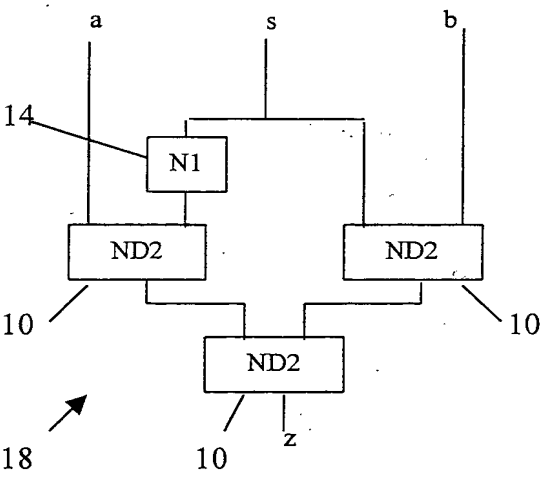
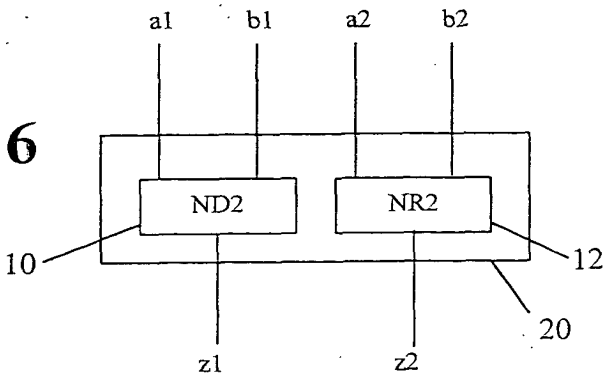



FIG. 5

FIG. 6


a1
b1
a2
b2
ND2
NR2
10
12
20
z1
z2

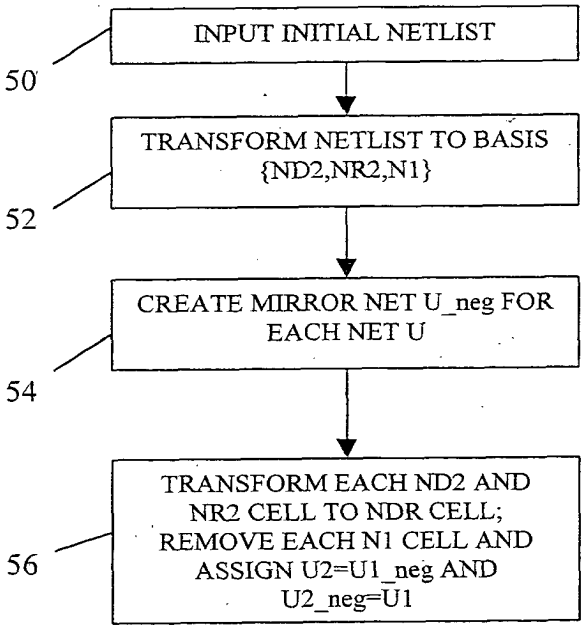

INPUT INITIAL NETLIST
50
TRANSFORM NETLIST TO BASIS {ND2,NR2,N1}
52
CREATE MIRROR NET U_neg FOR EACH NET U
54
TRANSFORM EACH ND2 AND NR2 CELL TO NDR CELL; REMOVE EACH N1 CELL AND ASSIGN U2=U1_neg AND U2_neg=U1
56

FIG. 7

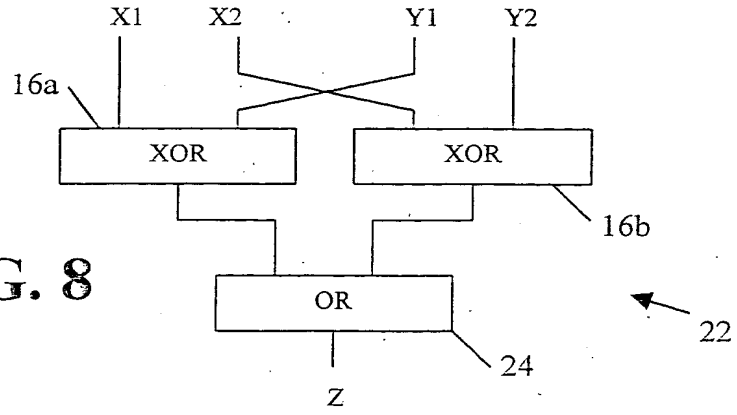

X1
X2
Y1
Y2
16a
XOR
XOR
16b
OR
22
24
Z

FIG. 8

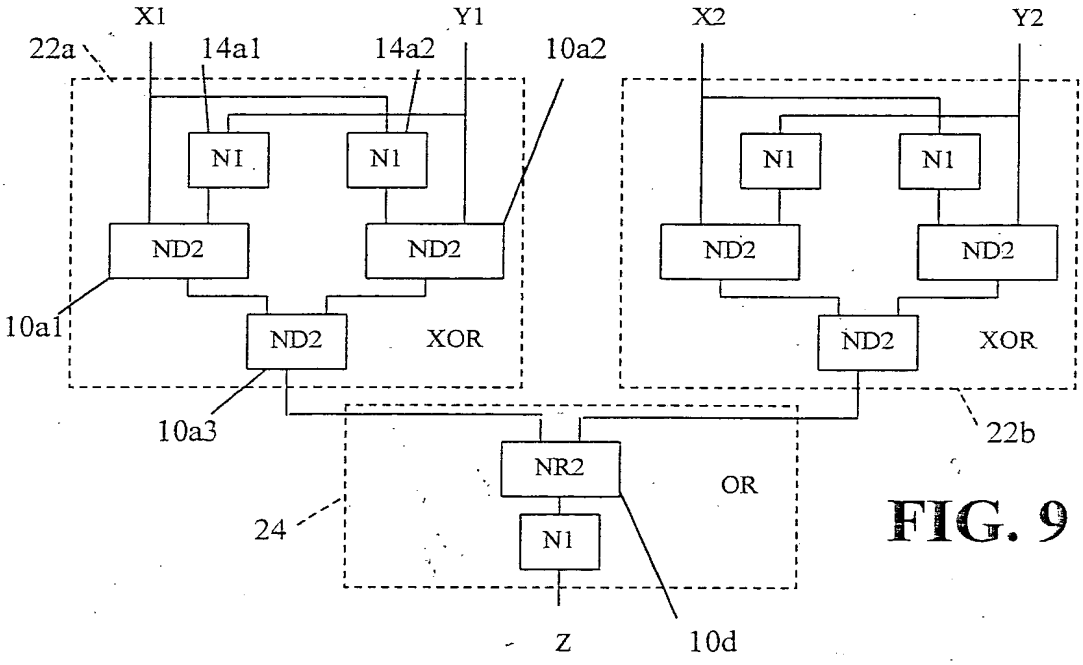

X1
Y1
X2
Y2
22a
14a1
14a2
10a2
N1
N1
N1
N1
ND2
ND2
ND2
ND2
10a1
ND2
XOR
ND2
XOR
10a3
22b
NR2
OR
24
N1
Z
10d

FIG. 9

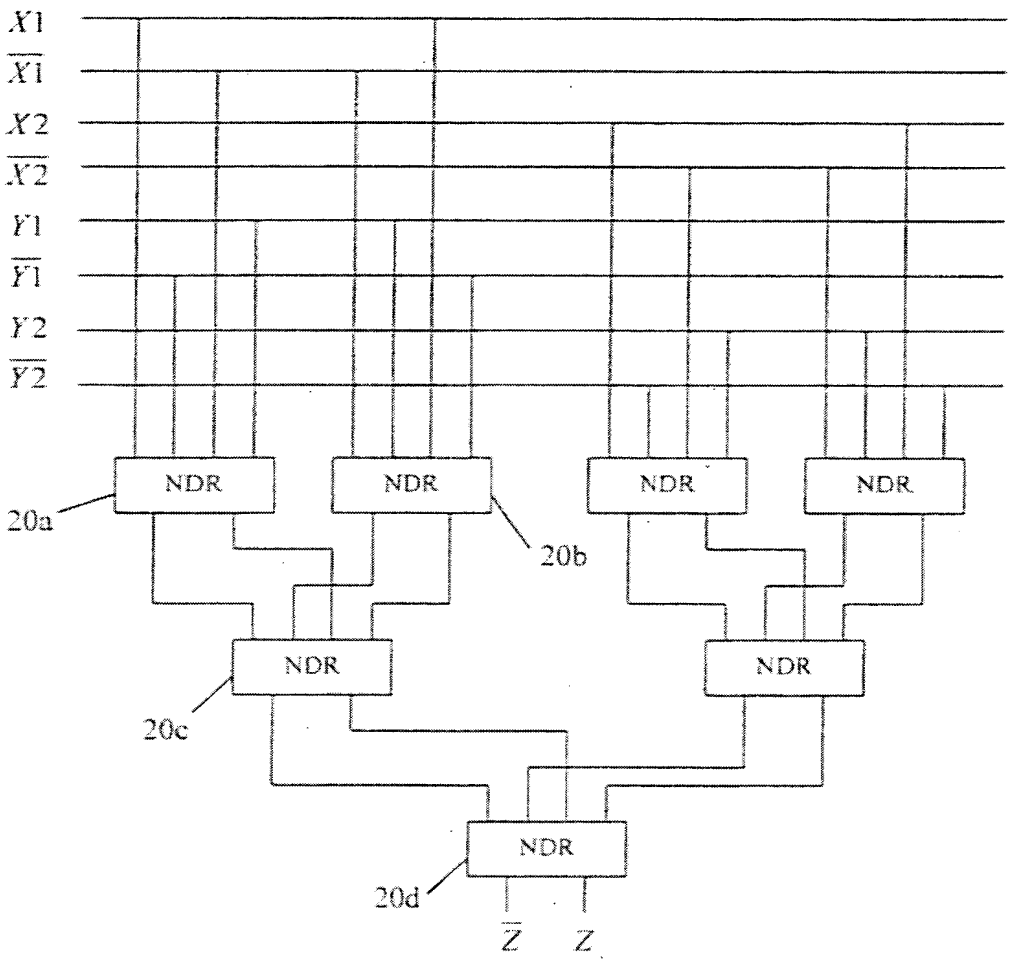

X1
$\overline{X1}$
X2
$\overline{X2}$
Y1
$\overline{Y1}$
Y2
$\overline{Y2}$
NDR
NDR
NDR
NDR
20a
20b
NDR
NDR
20c
NDR
20d
$\overline{Z}$
Z

FIG. 10